

REMARKS

Claims 1, 5, 11, 22, 24, and 25 are pending. By this amendment, claims 1, 24, and 25 are amended for the Examiner's consideration. Applicant respectfully requests reconsideration and timely withdrawal of the pending rejection for the reasons discussed below.

35 U.S.C. § 103 Rejection

Claims 1, 5, 7, 11, 14¹, 22, 24 and 25 are rejected under 35 U.S.C. § 103(a) over U. S. Patent No. 5,096,029 to Bauer, *et al.* ("Bauer") in view of U. S. Patent No. 4,064,910 to Weisenberger ("Weisenberger"). Applicant respectfully traverses this rejection for at least the following reasons.

In the Official Action, the Examiner suggests that the combination of Bauer and Weisenberger discloses all the features of claim 1, which recites in pertinent part:

at least one streamlined recess portion which opens the gas inlet and outlet formed on a side of the outer peripheral surface of the central portion of the gas opening/closing pin; and

an integrally formed washer-shaped boss body portion formed at a lower end of the opening/closing pin,

wherein the at least one streamlined recessed portion does not extend about the entire outer periphery of the central portion.

Claims 24 and 25 recite, in pertinent part:

... wherein the one or more inwardly continuously contoured troughs do not extend continuously about the entire outer periphery of the central portion ...

¹ This appears to be a mistake, as claim 14 was cancelled in a previous response.

The Examiner admits that Bauer fails to disclose a streamlined recessed portion (or trough) that does not extend about the entire periphery of a central portion of a gas opening/closing pin, and relies on Weisenberger to supply this deficiency. Specifically, the Examiner argues that Weisenberger teaches a streamlined recess (30) on a pin member that does not extend around the entire periphery of the central portion, as claimed. The Examiner further concludes that given these teachings, it would have been obvious to one skilled in the art at the time the invention was made to have provided Bauer's pin with a mono-sided recess as taught by Weisenberger. The Examiner also suggests that a person of ordinary skill in the art would have been motivated to make this modification to provide a communication channel adjacent a gas outlet and to cut down on machining costs. Applicant respectfully disagrees and offers the following in traversal of the Examiner's arguments.

Neither Bauer nor Weisenberger teach or even suggest a streamlined recess or a contoured trough that does not extend around a periphery

Applicant respectfully submits that the Examiner's applied combination of prior art fails to teach each and every claim limitation. Neither Bauer nor Weisenberger teach or even suggest a streamlined recess or a contoured trough. Moreover, neither Bauer nor Weisenberger teach or even suggest a streamlined recess or a contoured trough that do not extend around a periphery.

The Bauer tapered section 49 as shown in figures 2 and 5, extends around the periphery of valve body 38. The Examiner admits in the Official Action that the tapered section 49 does not teach the feature of not extending around a periphery. To this the Examiner indicates that this feature is shown in Weisenberger. However, Weisenberger is structured substantially in the same way as Bauer. In Weisenberger, the "annular" groove 31 extends annularly around the valve stem 18a (see figure 3 reproduced below and column 7, lines 45-48). Thus, neither Bauer

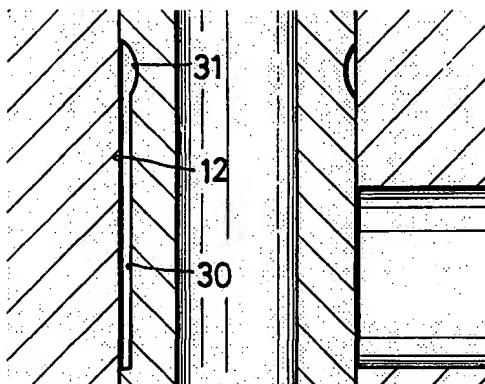
nor Weisenberger teach or even suggest a streamlined recess or a contoured trough that does not extend around a periphery.

Aditionally, Bauer discloses a tapered section 49 that, as shown in figure 2, has sharp-edged varying diameter sections (column 4, lines 28-36). This tapered section is not contoured or streamlined as recited by independent claims 1, 24, and 25.

Similarly, Weisenberger discloses an annular groove 31 and a flattened region 30 (column 7, lines 45-49). More specifically, the Examiner asserts that the flattened region 30 renders obvious the streamlined recess or a contoured trough. However, Applicant respectfully submits that the flattened region 30 is neither a streamlined recess nor a contoured trough. As shown in figure 3, the flattened region 30 is flat and further includes a sharp edge that extends to the left, with respect to figure 3. This sharp edge is neither a streamlined recess nor a contoured trough as recited by the independent claims.

References Must Be Considered As a Whole

The MPEP and case law require that the Examiner consider each reference as a whole, including any part(s) thereof. However, Applicant submits that the Examiner has not considered the references as a whole, but instead has impermissibly chosen only particular parts from the Weisenberger reference. For example, Figure 3 of the Weisenberger reference clearly shows that the recess 30 referenced by the Examiner does not exist in isolation, but rather includes (and terminates in) an annular groove 31. Contrary to the claimed invention, this annular groove extends around the entire circumference of the valve stem 18a. Illustratively, this is shown as:



Rather than applying the annular groove and its extension region 30 as a whole to the teachings of Bauer, the Examiner selectively separates the region 30 from its attached annular groove 31 and applies only the region 30 to Bauer's teachings. Applicant respectfully submits that such an application is not correct, because this reference explicitly teaches forming a recess that extends about the outer periphery of a cylindrical object such as a valve or a piston. In fact, selectively singling out only the recessed portion 30 runs contrary the express and inherent teachings of either Bauer or Weisenberger.

For these reasons, claims 1, 24, and 25 are allowable over Bauer or Weisenberger, whether alone or in combination. Claims 5, 7, 11, and 22 are also allowable based on their dependencies from allowable claim 1. Applicant thus respectfully requests that the rejection of claims 1, 5, 7, 11, 22, and 24-25 be withdrawn.

Lack of Motivation to Combine

As further described below, the Examiner's suggested combination lacks support, either in the references themselves or in the knowledge available to a person of ordinary skill in the art at the time the invention was made. Additionally, modification of Bauer to incorporate the

features taught by Weisenberger would destroy the function of Bauer's invention and render it inoperable. Because a person skilled in the art at the time the invention was made would have recognized this, the Examiner's suggested combination makes sense only in hindsight, which is impermissible.

Referring to Figure 2 of Bauer for example, a piston 21 designed in the shape of a sleeve is shown. An annular conduit 51 formed in the receptacle 29, in the area of the transition between the piston rod 12 and the annular collar 40, is connected via an overflow opening 52 to the partial liquid chamber 19b. Radially opposite the overflow opening 52, a slit-like opening 53 is formed in the support and guide bush 39. In a front end 54 of the valve housing 33, a throttle opening 55 is associated with the slit-like opening 53 such that liquid can flow from the partial liquid chamber 19b via the conduit-like overflow opening 52, into the annular conduit 51, and then, on the diametrically opposite side, through the throttle opening 55 and the opening 53 into the overflow chamber 50.

In operation, the trigger pin 23 depresses into the piston rod 12, and the valve body moves downwards towards the partial liquid chamber 19a such that an annularly tapered section of the valve body moves into an area proximate the seal 41. Previously, a bottom portion of the valve body having a larger diameter than the annularly tapered portion had sealingly contacted each of the sealing beads 43, 44 so that fluid would not drain out of the bottom of the overflow chamber 50. However, when the valve body moves downward into the operating position, a gap appears between the sealing beads 43 and 44 and the small diameter, annularly tapered section 49. Consequently liquid flows out of the overflow chamber 50 along the inside of the seal 41 into the opening 30, and from there into the partial liquid chamber 19a. In an alternate embodiment,

the liquid may flow in the opposite direction (e.g., from the partial liquid chamber 19a into the overflow chamber 50).

Referring again to Figure 3 of Bauer, it is seen that Bauer requires the annular seals 36 and the sealing beads 43, 44 in order to operate properly. Replacing Bauer's valve stem with Weisenberger's valve stem would destroy the sealing effect of Bauer. For example, with the Weisenberger valve stem placed in the closed position shown in Figure 3, the annular groove 30 would be positioned in an area proximate Bauer's annular seal 36. Because the annular groove curves radially inwardly, such a positioning would create a gap between the annular groove and the annular seal 36. Because the Weisenberger annular groove connects to a flat portion, leaks would occur in the Bauer device as fluid from outlet 55 flowed in to the flattened portion, into the annular groove, and from there into the gap formed adjacent Bauer's annular seal 36.

Additionally, with the Weisenberger valve stem in the closed position shown in Bauer's Figure 3, the valve stem's flat portion would extend down into an area proximate the sealing beads 43, 44. Because the flattened portion has a smaller diameter than the rest of the valve stem, a gap would be formed between the flattened portion and the sealing beads 43 and 44. Consequently, leaks would occur in the Bauer device as fluid flowed from outlet 55 into the flattened portion, and from there into the gap formed between the sealing beads 43, 44 and the flattened portion.

Also referring again to Bauer's Figure 3, it is seen that the annularly-shaped overflow chamber 50 is crucial to the operation of the Bauer device. For example, when the valve stem is in the closed position as shown, the sealing beads 43 and 44 sealingly adjoined to the lower diameter of the valve stem force fluid exiting from outlet 55 to flow into the overflow chamber, around the narrow diameter of the valve stem, and into the front end 54 of valve housing 33.

However, if Weisenberger's valve stem were substituted in the Bauer device, only one-half the overflow chamber 50 would be formed because the flattened portion of the Weisenberger valve stem does not annularly extend around the valve housing. This deficiency would not be cured by the annular groove because the groove, taught by Weisenberger, would be positioned a predetermined distance above the front end 54 of valve housing 33.

For these reasons, claims 1, 24, and 25 are allowable over Bauer or Weisenberger, whether alone or in combination. Claims 5, 7, 11, and 22 are also allowable based on their dependencies from allowable claim 1. Applicant thus respectfully requests that the rejection of claims 1, 5, 7, 11, 22, and 24-25 be withdrawn.

Minor Amendments

Additionally, minor amendments have been made to claims 1, 24, and 25 in order to improve the language thereof. In these amendments, Applicant has made several changes to the language of the claims to render the same more self consistent, as well as more fully in compliance with U.S. syntax, idiom and grammar. These amendments do not change the scope of the claims but are merely cosmetic changes that give rise to no file wrapper estoppel.

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CONCLUSION

In view of the foregoing amendments and remarks, Applicant submits that all of the claims are patentably distinct from the prior art of record and are in condition for allowance. The Examiner is respectfully requested to pass the above application to issue. The Examiner is invited to contact the undersigned at the telephone number listed below, if needed. Applicant hereby makes a written conditional petition for extension of time, if required. Please charge any deficiencies in fees and credit any overpayment of fees to **Attorney Deposit Account No. 19-0089**.

Respectfully submitted,



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